WHAT IS CLAIMED IS:

1. A method of engineering a cell line for reduced dependence on exogenous growth factors, comprising:

(a) introducing into the cell line one or more of:

(i) a polynucleotide comprising a coding sequence of a growth factor ligand;

(ii) a polynucleotide comprising a coding sequence of a growth factor receptor; or

(iii) a polynucleotide comprising a coding sequence of an activated downstream growth factor target; and

(b) culturing the cell line in a cultivation infrastructure.

2. The method of claim 1, wherein the growth factor ligand is selected from basic fibroblast growth factor (FGF2), insulin-like growth factor 1 (IGFl), and platelet-derived growth factor subunit B (PDGFb).

3. The method of claim 1 or 2, wherein the polynucleotide comprising a coding sequence of a growth factor ligand further comprises an additional two or more growth factor ligands, wherein each of the additional growth factor ligands is selected from FGF2, IGFl, and PDGFb.

4. The method of claim 3, wherein the growth factor ligands is FGF2.

5. The method of claim 4, wherein the FGF2 comprises an amino acid sequence having at least 80% sequence identity to a sequence selected from SEQ ID NO: 1-15.

6. The method of claim 3, wherein the growth factor ligands is IGFI.

7. The method of claim 6, wherein the IGFl comprises an amino acid sequence having at least 80% sequence identity to a sequence selected from SEQ ID NO: 16-17.

8. The method of claim 3, wherein the growth factor ligands is PDGFb.

9. The method of claim 8, wherein the PDGFb comprises an amino acid sequence having at least 80% sequence identity to a sequence selected from SEQ ID NO: 18-21.

10. The method of any one of claims 1-9, wherein the polynucleotide comprising a coding sequence of a growth factor ligand further comprises a coding sequence of a signal peptide located 5' to the coding sequence of the growth factor ligand, and wherein the signal sequence and the growth factor ligand are a fusion protein.

11. The method of claim 10, wherein the signal sequence comprises an amino acid sequence having at least 80% sequence identity to a sequence selected from SEQ ID NO: 22-31.

12. The method of any one of claims 1-11, wherein the polynucleotide comprising a coding sequence of a growth factor ligand further comprises a regulatory sequence operably linked to the coding sequence of the growth factor ligand and/or additional growth factor ligands.

13. The method of any one of claims 1-12, wherein expression of the growth factor ligands is controlled using an inducible promoter.

14. The method of any one of claims 1-13, wherein

(a) the concentration of FGF2 in the culture medium is increased by at least 0.001 ng/mL as compared to cell lines not engineered to include a polynucleotide encoding FGF2;

(b) the concentration of IGF-1 in the culture medium is increased by at least 0.001 ng/mL as compared to cell lines not engineered to include a polynucleotide encoding IGFl; and/or

(c) the concentration of PDGFb in the culture medium is increased by at least 0.001 ng/mL as compared to cell lines not engineered to include a polynucleotide encoding PDGFb.

15. The method of any one of claims 1-13, wherein

(a) the concentration of FGF2 in the culture medium is increased by at least 2.5% as compared to cell lines not engineered to include a polynucleotide encoding FGF2;

(b) the concentration ofIGF-1 in the culture medium is increased by at least 2.5% as compared to cell lines not engineered to include a polynucleotide encoding IGFI; and/or

(c) the concentration of PDGFb in the culture medium is increased by at least 2.5% as compared to cell lines not engineered to include a polynucleotide encoding PDGFb.

16. The method of any one of claims 1-15, wherein the growth factor receptor is selected from fibroblast growth factor receptor (FGFR), insulin growth factor I receptor (IGF IR), and platelet-derived growth factor receptor (PDGFR).

17. The method of any one of claims 1-16, wherein the method comprises introducing into the cell:

(i) a polynucleotide comprising a coding sequence of FGF2, and a polynucleotide comprising a FGFR;

(ii) a polynucleotide comprising a coding sequence of IGFl, and a polynucleotide comprising an IGF IR;

(iii) a polynucleotide comprising a coding sequence of PDGF, and a polynucleotide comprising a PDGFR, or

(iv) a combination selected from: (i) and (ii), (ii) and (iii), (ii) and (iii), and (i), (ii), and (iii).

18. The method of any one of claims 1-17, wherein the cell line is from a livestock, poultry, game or aquatic animal species.

19. The method of any one of claims 1-17, wherein the cell line is from any animal species intended for human or non-human dietary consumption.

20. The method of claim 19, wherein the cell line is a myogenic cell line and the myogenic cell line comprises myoblasts, myocytes, satellite cells, side population cells, muscle derived stem cells, mesenchymal stem cells, myogenic pericytes, or mesoangioblasts.